

**IN THE UNITED STATES DISTRICT COURT
FOR THE EASTERN DISTRICT OF TEXAS
SHERMAN DIVISION**

INNOVATION SCIENCES, LLC,

Plaintiff,

v.

AMAZON.COM, INC., et al.

Defendants.

Civil Action No. 4:18-cv-00474-ALM
(LEAD CONSOLIDATED CASE)

**OPPOSITION OF AMAZON.COM, INC. AND AMAZON WEB SERVICES, INC.
TO PLAINTIFF INNOVATION SCIENCES, LLC'S MOTION FOR JUDGMENT
AS A MATTER OF LAW, OR ALTERNATIVELY,
RULE 59(A) MOTION FOR A NEW TRIAL**

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INTRODUCTION

IS does not provide any basis to disturb the jury’s verdict of non-infringement and invalidity. Rather than identifying any facts that the jury overlooked or any failure of proof by Amazon, IS instead asks the Court to reconsider how it structured the trial, evidentiary rulings it made during trial, or its rulings on other post-trial motions. Substantial evidence supports the jury’s verdict, and the Court committed no prejudicial errors. The Court should deny the motion.

I. INNOVATION SCIENCES IS NOT ENTITLED TO JUDGMENT AS A MATTER OF LAW AS TO ANY CLAIM OR ISSUE¹

Judgment as a matter of law is only appropriate if the Court finds no “legally sufficient evidentiary basis” to support the jury’s verdict. *See EEOC v. EmCare, Inc.*, 857 F.3d 678, 682 (5th Cir. 2017) (quoting Fed. R. Civ. P. 50(a)(1)). If “reasonable persons could differ in their interpretations of the evidence, then the motion should be denied.” *Id.* (quoting *Bryant v. Compass Grp. USA Inc.*, 413 F.3d 471, 475 (5th Cir. 2005)). The Court must view the evidence and draw all reasonable inferences in the light most favorable to the verdict. *Id.* at 682–83. Courts must be “‘especially deferential’ to jury verdicts; the verdict should be affirmed ‘unless the facts and inferences point so strongly and overwhelmingly in the movant’s favor that reasonable jurors could not reach a contrary conclusion.’” *Id.* at 683 (quoting *EEOC v. Boh Bros. Constr. Co.*, 731 F.3d 444, 451 (5th Cir. 2013)).

¹ IS raised jury instruction issues and evidentiary rulings in the section of its motion arguing for judgment as a matter of law. These grounds relate only to IS’s motion for a new trial under Rule 59, which concerns unfairness or prejudicial error at trial (*see* Fed. R. Civ. P. 59(a); *Smith v. Transworld Drilling Co.*, 773 F.2d 610, 613 (5th Cir. 1985)), not to its request for judgment as a matter of law under Rule 50 concerning sufficiency of the evidence. *See* Fed. Prac. & Proc. (Wright & Miller) § 2583 (3d ed. Apr. 2021). Amazon therefore addresses them in Section II below concerning the Rule 59 motion.

A. Substantial evidence supports the jury’s verdict of invalidity.²

1. Amazon presented sufficient evidence that the asserted patent claims are invalid for lack of written description.

Sufficient evidence supports the jury’s invalidity verdict on grounds that the asserted patent claims lack written description under 35 U.S.C. § 112. Section 112 requires that “the applicant must [] convey with reasonable clarity to those skilled in the art that, *as of the filing date sought*, he or she was in possession *of the invention*.” *Vas-Cath Inc. v. Mahurkar*, 935 F.2d 1555, 1563–64 (Fed. Cir. 1991) (emphasis added and in original). “The invention is, for purposes of the ‘written description’ inquiry, *whatever is now claimed*.” *Id.* at 1564 (emphasis in original). The written description requirement is “not a question of whether one skilled in the art *might* be able to construct the patentee’s device from the teachings of the disclosure Rather, it is a question whether the application necessarily discloses that particular device.” *Martin v. Mayer*, 823 F.2d 500, 505 (Fed. Cir. 1987) (emphasis in original).

IS’s motion fails for several reasons.³ First, IS ignores that Amazon presented sufficient evidence at trial from which the jury could reasonably conclude that the common specification of the asserted patents fails to provide adequate written description *regardless of IS’s claimed priority date*. Amazon’s technical expert, Dr. David Johnson, testified that the asserted claims combine two separate ideas, but the specification fails to disclose how those ideas combine into the single invention in the claims. (Dkt. 879 at 66:10–71:20.) Dr. Johnson testified that the first idea is

² Amazon raised multiple different grounds for invalidity. To show entitlement to judgment as a matter of law, IS must show that *none* of these grounds was supported by substantial evidence. *i4i Ltd. P’ship v. Microsoft Corp.*, 598 F.3d 831, 849 (Fed. Cir. 2010) (a general verdict will not be set aside “simply because the jury might have decided on a ground that was supported by insufficient evidence.”) (quoting *Walther v. Lone Star Gas Co.*, 952 F.2d 119, 126 (5th Cir. 1992)).

³ As an initial matter, IS claims that Amazon waived its written description defense by stipulating to proposed jury instructions that recited IS’s claimed priority date of August 10, 2006. (Dkt. 908 (“Mot.”) at 7 (citing Dkt. 845 at 5).) The Court already rejected this argument. (See Dkt. 868 (Trial Tr.) at 14:5-18:4 (relying on *Endo Pharm., Inc. v. Mylan Pharm. Inc.*, No. 11-cv-00717, 2014 WL 334178, at *26 (D. Del. Jan. 28, 2014).) Moreover, IS has itself waived this issue as it did not make a Rule 50(a) motion on this ground or object to instructing the jury on written description because of it. (Dkt. 849; Dkt. 885 (Trial Tr.) at 200:21-201:5.)

disclosed in Figure 5 (“a system for providing status updates”), which shows an illustration of a “Diaper Condition Sensing Module” (DCSM) that consists of a sensor and transmitter placed in a diaper. (*Id.* at 66:19–68:11; PTX1.) When the sensor in the diaper detects wetness, the transmitter sends information to the central receiver/controller, which then sends that information to the caregiver (i.e., to the caregiver’s cell phone). (Dkt. 879 at 68:12–22.) The second idea is a mobile terminal signal conversion module (MTSCM) illustrated in Figure 9. (*Id.* at 68:23–69:5; PTX1.) In Figure 9, a cellular telephone receives a video signal, and the MTSCM converts the video signal that was received by the cell phone to a form of video suitable for display on a larger display (though the figure does not disclose how the conversion is performed). (Dkt. 879 at 69:6–70:22.) Dr. Johnson then testified that the asserted claims recite a single device capable of performing both functions: receiving and converting video, while also monitoring and reporting the status of items. (*Id.* at 70:23–71:17.) But the patents fail to describe a *combined* diaper monitor and video conversion device, or explain its intended function or even why anyone would want such a device. (*Id.* at 71:18–20.) From this evidence, the jury could conclude that the specification fails to “convey with reasonable clarity to those skilled in the art that” that the inventors possessed the invention recited in the asserted claims. *Vas-Cath*, 935 F.2d at 1563–64; *Martin*, 823 F.2d at 505; *Hynix Semiconductor Inc. v. Rambus Inc.*, 645 F.3d 1336, 1352 (Fed. Cir. 2011) (affirming denial of JMOL regarding written description because expert testimony provided substantial evidence).

Second, sufficient evidence also supports a verdict that the asserted claims specifically lacked written description as of IS’s claimed priority dates, August 10, 2006, and February 2, 2007. *Even IS’s expert* testified that the invention was “created” in “May of 2007” (Dkt. 883 (Trial Tr., McAlexander) at 163:11–16) and was not disclosed to the Patent Office until that month:

Q. [W]hat would be the appropriate priority date, taking a conservative view, of the disclosures associated with these patents?

A. I would take an appropriate conservative date of May the 22nd, 2007, because

there should be absolutely no issue that all the figures that are involved—and including figures that deal with decoding and decompression—it’s all in there as of May the 22nd, 2007.

(*Id.* at 165:2–9.) Mr. McAlexander also identified Figure 16 of the shared specification as the disclosure that purportedly provided written description support for the claims. (Dkt. 868 at 115:11–13 (“Figure 16 is a good one”); *see also id.* at 112:24–113:18.) But he admitted that Figure 16 *was not* in the August 10, 2006 application and claimed that it “was actually brought into the prosecution as of the filing date May 22, 2007.” (Dkt. 883 at 164:13–21.) And Amazon’s expert Dr. Johnson provided additional evidence supporting the verdict. He testified that the August 10, 2006 application fails to disclose many elements recited in the asserted claims including the MC System, Centralized HUB System, compression, decompression, signal encoders and decoders, and video conversion. (Dkt. 879 at 72:11–81:17; D123 (Aug. 10, 2006 application.) He also testified that even Figure 16, on which Mr. McAlexander had relied, failed to describe the claims. (Dkt. 880 at 168:8–169:1.)

IS’s remaining argument is that “Amazon provided no evidence” about the February 2, 2007 application. (Dkt. 908 Mot. at 6–7.) But this is wholly irrelevant given that IS’s own expert testified that the correct priority date for the asserted claims was later, May 22, 2007, and because Amazon presented evidence that the asserted claims lack written description support *even in the issued patents’ specification*. Mr. McAlexander’s admission and Mr. Johnson’s testimony were enough for a reasonable juror to conclude that the asserted claims lacked written description in the February 2, 2007 application. *See, e.g., Kinetic Concepts, Inc. v. Smith & Nephew, Inc.*, 688 F.3d 1342, 1356 (Fed. Cir. 2012) (the district court must consider all the trial evidence, regardless of who presented it). Moreover, because IS failed to introduce that application into evidence at trial, there is no basis whatsoever on which the Court could rule otherwise. IS thus failed to show that

the “facts and inferences point so strongly and overwhelmingly in [its] favor that reasonable jurors” could not find for Amazon on the issue of written description. *EmCare*, 857 F.3d at 683.

2. The jury had ample evidence from which it could conclude that the HAL system anticipated or rendered obvious the asserted claims.

IS contends that Amazon did not present substantial evidence from which the jury could conclude that the HAL system anticipated (§ 102) or rendered obvious (§ 103) the asserted claims. To prove invalidity by anticipation, an accused infringer must present evidence showing that “each and every [limitation] is found within a single prior art reference.” *Biogen MA Inc. v. EMD Serono, Inc.*, 976 F.3d 1326, 1331–32 (Fed. Cir. 2020) (quoting *Summit 6, LLC v. Samsung Elecs. Co.*, 802 F.3d 1283, 1294 (Fed. Cir. 2015)). Anticipation is a question of fact “and thus within the ordinary provenance of the jury.” *Id.* An accused infringer can also prove invalidity by obviousness by showing a “combination of elements found in the prior art” that “does no more than yield predictable results.” *KSR Int’l Co. v. Teleflex Inc.*, 550 U.S. 398, 401 (2007). While the ultimate issue of obviousness is a question of law, it depends on subsidiary factual determinations regarding “the scope and content of the prior art” and “the differences between the prior art and the claimed invention,” among other things. *MobileMedia Ideas LLC v. Apple Inc.*, 780 F.3d 1159, 1167 (Fed. Cir. 2015). To establish invalidity over a prior art system, a challenger must generally establish that the claimed system was publicly available or accessible as of the effective filing date of the patents. *See, e.g., CEATS, Inc. v. Cont’l Airlines, Inc.*, 526 F. App’x 966, 970 (Fed. Cir. 2013) (testimony of witnesses, corroborated by contemporaneous documents and videos, established public release of prior art system).

The asserted claims generally require a device configured to communicate a short-range wireless communication regarding the updated status of a household item, in connection with information for managing the item. (*See, e.g.,* PTX1 (’983 patent), cl. 22.) Other limitations require

conversion (*e.g.*, encoding, decoding, compression, decompression) of a multimedia signal for display on another device. (*See, e.g.*, PTX2 ('918 patent), cl. 9.) Amazon offered testimony and evidence to the jury showing that the HAL prior art system disclosed each of these limitations. The HAL system consists of an early home automation software program, HAL2000, which is installed on a standard desktop computer and configured to operate with various third-party devices, such as wireless cameras, a thermostat, or a cellular phone—all of which predated the earliest claimed priority date of the asserted patents. Among its functions, HAL2000 could take an action, *e.g.*, send an email or transmit video to a computer, in response to a detected change in status, *e.g.*, movement detected by a home video camera. (*See, e.g.*, Dkt. 879 (Trial Tr., Shriver) at 34:7–35:17, 38:5–39:12.)

a. Amazon presented evidence from which a reasonable jury could conclude that the HAL system mapped by Dr. Johnson existed as of the critical date.

IS argues that Amazon did not present substantial evidence that the HAL System existed before August 10, 2006, because the system Amazon's expert Dr. Johnson examined was assembled by Tim Shriver in 2019.⁴ (Mot. at 9–10.) IS's argument fails because the jury had substantial evidence that the HAL system—including the HAL2000 software and each component Dr. Johnson relied on—existed and was used by customers before the earliest claimed priority date.

The jury heard testimony from Mr. Shriver, CEO of Home Automated Living, and the most knowledgeable witness regarding HAL2000 and the HAL system. Mr. Shriver testified that he

⁴ IS contends that Amazon was required to show that the HAL system existed as of August 10, 2006, which it claims is the “stipulated priority date of the patents-in-suit.” (Mot. at 9.) But as discussed above, Amazon never stipulated that this was the proper priority date, and substantial evidence supports the conclusion that neither the August 2006 nor the February 2007 applications provides adequate written description for the asserted claims. Thus, for purposes of invalidity, Amazon only needed to show that the asserted prior art existed as of the filing date of the patents. Nevertheless, Amazon did show that the HAL system pre-dated IS's earliest claimed priority date.

started work on HAL2000 software program in 1994 and founded his company Home Automated Living in 1997. (Dkt. 879 at 26:1–11.) HAL2000 was a home automation software system designed to run on standard personal computers to control a vast array of smart devices—security systems, lights, phones, thermostats, home theater systems, and more. (See D615 (HAL2000 User Guide) at 10.) HAL2000 was configured to interoperate with a variety of third-party devices that were available before 2006. (Dkt. 879 (Trial Tr., Shriver) at 30:9–12.) Mr. Shriver testified that he not only wrote the code for the HAL2000 software, but he also interacted directly with customers, providing technical support, and assisted them in configuring their own home automation systems. (*Id.* at 27:18–28:10.) Thus, Mr. Shriver had personal knowledge of the various ways in which customers configured HAL2000 with their smart home peripherals.

Mr. Shriver testified that the HAL system that Dr. Johnson examined existed, was available to the public, and was used, all before 2006. In response to a subpoena, Mr. Shriver produced a Dell desktop computer, on which he installed version 3.6.9 of the HAL 2000 software, which he confirmed based on source code logs existed as of August 9, 2006. (*Id.* at 57:15–58:3.) He collected and produced generic computer peripherals—a monitor, keyboard, and mouse—and “automation hardware like lamp modules, interface modules, [and] even cables and speakers and microphones that would be needed to effect home automation,” all of which he had obtained “pre-2006.” (*Id.* at 51:22–52:1.) Mr. Shriver also reviewed screen shots from the HAL2000 software and videos demonstrating the use of HAL2000 in combination with the smart home software and accessories examined by Mr. Johnson, and confirmed these accurately depicted the operation of HAL2000 in configurations that in fact *actually existed* and were used by customers prior to 2006. For example, he testified as follows:

- The system depicted in the video was the *very same* system—including the “computer,

speakers, keyboard, and all the hardware”—that he personally assembled using equipment dating from before August 2006 (*id.* at 36:25–37:10);

- The video showed the HAL system detecting motion in front of both a D-Link camera and an X10 wireless camera, and executing a macro to send an e-mail in response, and that this was “an operation that could have and would have been performed by HAL2000 prior to August 10, 2006” (*id.* at 34:7–35:17 (describing HAL2000 software, the codec for a D-link wireless camera, and an if-then rule for responding to detected motion); 38:5–17 (describing motion detection demonstration); 38:18–39:12 (wireless X10 camera));
- The video demonstration showed that in response to detected motion, HAL2000 launched a web user interface, HomeNet, which displayed the recorded video (*id.* at 41:3-12);
- The video demonstration showed a user setting an action—automatically sending an e-mail—to be taken in response to motion detected using the X10 camera, and this is how HAL2000 would have operated before August 10, 2006 (*id.* at 42:3–43:14);
- The video demonstration showed how a user could configure HAL2000 to send e-mails, and that the “particular configuration [shown in the video] . . . was used by users of HAL2000 prior to August 10, 2006” (*id.* at 43:19–44:23);
- The video demonstration showed the ability to use a cellular telephone to check on and set the temperature of a home thermostat, and this was “an operation of HAL2000 as it could have and would have operated prior to August 10, 2006” (*id.* at 45:6–46:6); and
- That various wireless IP cameras, including X10 wireless video camera, were “interoperable” with HAL2000 and the Digital Video Center add-on; an X10 video receiver would receive the video from the camera and could then be used to transfer the video to the computer; HAL2000 could receive a compressed video stream in, *e.g.*, MPEG-4 or JPEG format, and

output in an uncompressed video format; Mr. Shriver provided all of these components and tested them in connection with the subpoena; and all of the components were available prior to August 10, 2006, because Mr. Shriver purchased them before that date (*id.* at 47:10–50:9).

The jury also heard testimony from Dr. Johnson, one of ordinary skill in the art as of 2006. Dr. Johnson testified that based on his personal inspection and use of the HAL system and the various components provided by Mr. Shriver, the various video demonstrations he reviewed, the public demonstrations of HAL2000 including on the Oprah Winfrey show in 2000, and his own independent research, the HAL system—including the HAL2000 software and each component used with the software—“was, in fact, made and sold prior to August of 2006.” (Dkt. 880 (Trial. Tr., Johnson) at 67:9–69:7, 69:22–70:4, 73:2–10, 74:23–75:1; 126:14–127:10.) The jury also received evidence corroborating the testimony of Mr. Shriver and Dr. Johnson: screenshots of the HAL2000 software showing its operation and configuration (D74, D75, D79, D80), photos of the HAL system, including a CD for the HAL2000 software showing a copyright date of 2001, along with the original packaging and various accessories (D173, D1179), and an operating manual for HAL2000 showing a copyright date of 2003 (D615). Given this evidence, the jury could have reasonably concluded that the HAL system mapped by Dr. Johnson existed as of August 10, 2006.

None of IS’s arguments change this. IS takes testimony from Mr. Shriver out of context to argue that he somehow admitted that the HAL system did not predate the asserted patents. (Mot. at 10.) But as noted above, Mr. Shriver made no such admission and testified to the opposite. Moreover, although Mr. Shriver testified that customers could configure their systems “like a snowflake,” he confirmed just seconds later that “the odds of it, it’s probably happened.” (Dkt. 879 at 54:2–7.) As Mr. Shriver explained, he specifically designed HAL2000 to be interoperable with these “disparate” third-party devices. (*Id.* at 29:18–21, 47:12–14, 55:2–15.) Mr. Shriver also

testified that he provided extensive customer support, and accordingly knew whether configurations were *actually* used. (*Id.* at 52:7–9, 55:16–23 (describing technical support); *see also, e.g., id.* at 44:14–16 (confirming that a “particular configuration . . . was used by users of HAL2000 prior to August 10, 2006”); *see also* Dkt. 880 (Trial Tr., Johnson) at 118:23–119:20 (noting that Mr. Shriver provided customer support, and “[b]ecause they’re interacting with customers, both customers with support questions, customers with sales questions, he’s going to know a lot about how his customers use his system”).)

Second, IS argues that “Dr. Johnson . . . admitted that he altered the HAL System in 2019 by editing a rule dictating how the HAL System responded to the detection of motion by the X10 camera.” (Mot. at 11.) This mischaracterizes Dr. Johnson’s testimony: he merely explained that he “set [his personal] e-mail address in there rather than some other e-mail address,” such that the HAL system would send *him* a notification of motion detected using the wireless camera, and he could verify that the system worked as expected. (Dkt. 880 at 125:17–126:7.) Dr. Johnson further explained that this use was “garden-variety” and “commonplace” as of 2006, and this addition of an e-mail address was expressly specified “in the HAL2000 documentation.” (*Id.* at 129:11–17.) IS identifies no contrary testimony. Ultimately, the fact that Mr. Shriver and Dr. Johnson had to reassemble a 2006 HAL system in present day does not change the fact that the HAL system Dr. Johnson mapped to the asserted claims existed as of August 2006 and invalidates the asserted claims. *See IP Innovation, L.L.C. v. Red Hat, Inc.*, No. 2:07-cv-447-RRR, 2010 WL 9501469, at *4 (E.D. Tex. Oct. 13, 2010) (finding no error where expert recreated a prior art system, relying on multiple pieces of evidence).

Finally, the assumption that underlies IS’s argument is that Amazon must show that a cus-

tomer connected and used the third-party smart home devices in the exact arrangement of the system that Dr. Johnson examined. But the claims require only a system *configured* to perform the various recited functions, not that these functions are performed or performed simultaneously. (See, e.g., PTX1 ('983 patent), cl. 22 (“wherein the wireless HUB system is further configured to communicate . . . information for managing an item status of an item”).) Indeed, IS’s expert Mr. McAlexander opined that the accused Amazon devices infringed the asserted claims in the box before they were ever connected to smart home devices, because according to him the devices as sold were “configured to perform” the claimed functions. (See, e.g., Dkt. 870 (Trial Tr., McAlexander) at 32:4–34:16.) While Mr. McAlexander is incorrect about the configuration of the Amazon devices, IS cannot have it one way for invalidity and another way when arguing infringement.

b. Amazon submitted evidence that the HAL system met each limitation of the asserted claims.

IS next contends that because Dr. Johnson purportedly “omitted various claim elements and limitations” in his testimony, the jury had no reasonable basis to find the patents invalid over the HAL system. (Mot. at 12.) While a defendant arguing invalidity by anticipation must generally present evidence showing how the prior art reference discloses each limitation, *Schumer v. Laboratory Computer Systems, Inc.*, 308 F.3d 1304, 1315 (Fed. Cir. 2002), no authority requires an expert to testify separately as to identical limitations recited in different claims. Moreover, as another court in this district noted, “[t]here is no ‘[r]igid preventative rule[]’ that requires *expert* testimony as to each element for an anticipation finding to be reasonable or supportable.” *Biscotti Inc. v. Microsoft Corp.*, 302 F. Supp. 3d 797, 813–14 (E.D. Tex. 2018) (emphasis in original).

Regardless, Dr. Johnson testified that the HAL system disclosed *each* limitation of the asserted claims, including the specific limitations IS identifies in its motion:⁵

⁵ Contrary to IS’s assertions, Dr. Johnson did not opine that the HAL2000 software by itself

- ***“information for managing an item status of an item” of claims 22 and 62 of the ’983 patent (Mot. at 12, 13):*** Dr. Johnson explained that the HAL system sends an e-mail in response to a detected change in status (*i.e.*, detected motion), and “the e-mail message itself” comprises “information for managing an item status of an item.” (Dkt. 880 at 75:4–9, 78:5–10.) Dr. Johnson referenced this testimony when testifying specifically about claim 62 of the ’983 patent. (*Id.* at 79:3–80:6.)
- ***“decoder” of claims 22 and 62 of the ’983 patent (Mot. at 13):*** IS incorrectly asserts that “Dr. Johnson never identified where the HAL System disclosed the claimed ‘decoder,’” and instead pointed to examples showing that “decompression occurs.” (Mot. at 13.) Dr. Johnson testified that the desktop computer of the HAL system “has a CPU, a central processing unit configured to perform a conversion of the multimedia signal where that rise is decompressing by a decoder,” and that this “was done by the software on the HAL2000 computer.” (Dkt. 880 at 92:4–12.) As *further* evidence, Dr. Johnson noted that because the video captured by the camera is able to be displayed on the screen, “it was certainly decompressed” since it does not “look like gibberish.” (*Id.* at 92:15–19.)
- ***“wireless HUB system” configured to communicate information about the updated status “to a cellular phone” of claim 64 of the ’983 patent (Mot. at 13):*** Dr. Johnson testified that the HAL system he tested was capable of sending an e-mail in response to a detected change in status, and this email could have been sent to his cell phone because “anything with an IP

invalidated all asserted claims. (*See* Mot. at 11.) Dr. Johnson described the HAL system, in some instances, as the “HAL2000 system” and in the cited portion of the transcript inadvertently referred to HAL2000 rather than the HAL system. (*Compare, e.g.*, Dkt. 880 at 68:18-21 (inadvertently testifying that the “HAL2000 software invalidates all of the asserted claims”) *with id.* at 68:25–69:7 (testifying that the HAL2000 software “when run in that configuration as intended, as designed, . . . functions as a wireless hub system” and referring to “the HAL system”); *see also id.* at 76:11–14 (concluding that the “HAL2000 system” invalidated an asserted claim).)

address would have functioned exactly the same.” (Dkt. 880 at 82:19–83:5.)

- ***“encoder” of claim 67 of the ’983 patent, claim 9 of the ’918 patent, and claim 1 of the ’798 patent (Mot. at 13, 16):*** Dr. Johnson explained that “the computer running HAL2000 software . . . comprises an encoder and a decoder,” and also testified that the central processing unit of the desktop computer performs the claimed encoding, decoding, and conversion. (Dkt. 880 at 94:11–15, 92:10–14.) Dr. Johnson further testified that when a WiFi camera captures high definition video, the computer “re-encod[es] . . . the video into MPEG 4 compression,” and also testified that the desktop computer’s central processing unit is configured to convert multimedia signals. (*Id.* at 92:10–19, 83:22–25.)
- ***“receive an instruction of making a call to a cellular phone and communicate a data from the cellular phone to accommodate the call” of claim 80 of the ’983 patent (Mot. at 14):*** IS concedes that Dr. Johnson identified this limitation in the HAL system, and cites to “many examples of” this in the various demonstration videos. (Dkt. 880 at 85:17–86:2.) IS argues Dr. Johnson’s reliance on demonstrative videos is improper. But experts can rely on demonstratives even if they are otherwise inadmissible. *See* Fed. R. Evid. 703. And the jury could have properly credited Dr. Johnson’s *testimony* in reliance on the video without reviewing the video itself as evidence.⁶ The jury also heard testimony from Mr. Shriver from which it could conclude that the HAL system met this limitation. (Dkt. 879 at 44:24–47:6 (describing use of a cellular phone to check the temperature and set the thermostat at home).) Finally, claim 80 of the ’983 patent does not require the wireless HUB system to “make a call”—it

⁶ IS’s argument that Dr. Johnson improperly relied on demonstrative evidence to show that the HAL system met elements of claim 86 of the ’983 patent fails for the same reason. (*See* Mot. at 15.)

requires only that the wireless HUB system “is configured to *receive an instruction* of making a call to a cellular phone and *communicate a data from the cellular phone* to accommodate the call.” (Mot. at 14; PTX1 (’983 patent), cl. 80 (emphasis added).)

- ***“first mobile terminal” and elements C and D of claim 86 of the ’983 patent (Mot. at 14):*** Elements C and D of claim 86 of the ’983 patent require “the management center system is configured to communicate a phone call with the first mobile terminal” and “the management center system is configured to transmit the converted data through the WiFi network to accommodate the phone call.” (PTX1 (’983 patent), cl. 86.) IS contends that Dr. Johnson did not identify a “first mobile terminal.” This contention lacks merit. Citing his earlier testimony, Dr. Johnson testified that the HAL system “has the WiFi network required by these claims” and “[w]e’ve seen that the HAL2000 system can make and receive phone calls” using a cellular phone. (Dkt. 880 at 87:23–88:9.) Finally, contrary to IS’s assertion, claim 86 does not require that the management center system *make a phone call*—like claim 80, claim 86 requires only that the system be “configured to communicate a phone call with the first mobile terminal.” (PTX1 (’983 patent), cl. 86; Mot. at 14.)
- ***“a data from the first mobile terminal and from a cellular network being converted to a converted data for transmission through the WiFi network” of claim 86 of the ’983 patent (Mot. at 14–15):*** Dr. Johnson testified that the “HAL system has the WiFi network required by these claims” and can “make and receive phone calls.” (Dkt. 880 at 88:7–9.) Dr. Johnson earlier explained how a user could direct the HAL system via a cell phone call, which would require both WiFi and a cellular connection, and thus some kind of data conversion. (*See id.* at 85:19–86:2; *see also* Dkt. 869 (Trial Tr., McAlexander) at 94:13–95:3 (“conversion is going to be required any time you cross boundaries between WiFi and cell phone”).)

- ***“wherein the management center system is configured to transmit a signal corresponding to [the] information content” of claim 86 of the ’983 patent (Mot. at 15):*** Dr. Johnson testified that the “information content” in the HAL system is “information from one of those remote cameras that was demonstrated in the videos” and that the HAL system was configured to send that video in MPEG-4 format. (Dkt. 880 (Trial Tr., Johnson) at 88:19–89:3.)
- ***Dependent claims 103 and 105 of the ’983 patent (Mot. at 15):*** Claim 103 requires that the management center system is configured to communicate item status information based on a wireless signal. (PTX1 (’983 patent), cl. 103.) Dr. Johnson testified that claim 103 is met when “[t]he wireless X10 camera detects the motion, sends the short-range wireless signal” and the computer running HAL2000 receives the signal. (Dkt. 880 at 89:11–19.) He clarified that “the updated status is the motion, and the HAL2000 computer sent e-mail in response to that.” (*Id.* at 89:18-19.) Claim 105 requires that the system “is configured to communicate information about the updated status with a centralized HUB system,” where “the wireless signal comprises information corresponding to a unique identifier associated with the item.” (*Id.*, cl. 105.) He testified that claim 105 is via “the X10 communication from the camera to the HAL system” and the e-mail the HAL system sends to the user. (*Id.* at 89:20–90:10.)
- ***Dependent claim 108 of the ’983 patent (Mot. at 15):*** This claim, requires, among other things, “wherein the short range wireless communication is initiated by a detection of the updated status; and wherein the short range wireless communication comprises information for a unique identifier associated with the item.” Dr. Johnson testified, referring to his earlier testimony, that this limitation is met when the HAL system detects motion and sends an e-mail in response: “The updated status is the motion detected by the wireless X10 camera,” “[t]he information about the updated status is the e-mail message,” and “[i]t’s in association

with the short-range wireless communication . . . coming from the wireless X10 camera.” (Dkt. 880 at 90:20–91:6.) Dr. Johnson noted these limitations were repeated elsewhere, and referred to his earlier testimony. (*Id.* at 91:3–4.)

- ***“input interface” and remaining limitations of claim 9 of the ’918 patent (Mot. at 15–16):***

Dr. Johnson testified, with respect to other claims, that “[t]he WiFi interface serves as the input interface as required by the claims,” and then with respect to claim 9 that “[t]he input interface is configured to receive a multimedia signal through a wireless communication network comprising a compressed digital video signal, that’s the signal from the WiFi camera.” (Dkt. 880 at 69:13–21, 92:4–9.) Contrary to IS’s assertion, Dr. Johnson did not “skip[] over” the remaining limitations of the claim, which generally require that the mobile terminal transmit an encoded signal to a digital television via an HD interface. (*See* Mot. at 16.) Indeed, Dr. Johnson explicitly described how the HAL system sends an encoded signal to an HD television. (Dkt. 880 at 92:20–93:6.)

- ***“in connection with identification of the centralized hub system based on recognition of the unique hub identifier, the information content carried by a compressed digital video signal” of claim 1 of the ’798 patent (Mot. at 16):*** Dr. Johnson testified that “the computer running HAL2000 software” is the “management system compris[ing] the centralized hub system,” the “information content” corresponds to information received from remote cameras, the “unique hub identifier” is the IP address stored in the “DHCP Dynamic Host Configuration table in the wireless router,” and the “compressed digital video signal” corresponds to a video signal sent to an HD television. (Dkt. 880 at 88:19–22, 94:11–95:21.)
- ***“high definition digital output interface to accommodate production of the information content on a high definition television” of claim 1 of the ’798 patent (Mot. at 16):*** Dr.

Johnson testified that the HAL system transfers video signals to a high definition display via an output interface, which he mapped to the graphics controller card of the desktop computer running the HAL2000 software. (*See, e.g.*, Dkt. 880 at 83:13–84:18, 84:22–85:10.)

Amazon offered testimony establishing that the HAL system met each limitation of each asserted claim. This substantial evidence supports a jury verdict of invalidity by anticipation under § 102.

3. Amazon offered substantial evidence that the HAL system renders the asserted claims obvious, including the claims that do not require Zigbee.

IS does not dispute that Amazon presented evidence that the HAL system renders obvious claims reciting Zigbee. (*See* Mot. at 17.) It argues, however, that Amazon has not provided evidence of invalidity by obviousness for the remaining claims because, purportedly, “Dr. Johnson failed to identify any recognized reasons for combining the pieces of the HAL System into the system used for Amazon’s invalidity case.” (*Id.*) IS’s argument fails for two reasons. First, no expert testimony is required to establish that a skilled artisan would be motivated to combine smart home devices, like a camera or thermostat, with a home automation software, HAL2000, specifically designed to operate with these devices. *See Columbia Sportswear N. Am., Inc. v. Seirus Innovative Accessories, Inc.*, 942 F.3d 1119, 1127 (Fed. Cir. 2019) (“legal determination of obviousness” did not require expert testimony “given the patent and references’ general, easily understood language, this is not a case that requires expert explanation”); *see also Intercont’l Great Brands LLC v. Kellogg N. Am. Co.*, 869 F.3d 1336, 1348 (Fed. Cir. 2017) (expert testimony not required for motivation to combine where the specification and claims did not include any new manufacturing equipment or instructions to produce the claimed food containers); *Wyers v. Master Lock Co.*, 616 F.3d 1231, 1240 (Fed. Cir. 2010) (“the ultimate inference as to the existence of a motivation to combine references may boil down to a question of ‘common sense’”). Indeed, the

HAL user manual admitted into evidence explicitly taught the combination of the HAL2000 software with third-party smart home devices like the ones used by the HAL system that Dr. Johnson examined. (*See, e.g.*, D615 at Chapter 4 (Setting Up HAL’s Features) (describing the use of HAL with sensors, security systems, e-mail systems, and thermostats).) *See KSR*, 550 U.S. at 403. Second, Dr. Johnson *did* testify regarding the motivation to combine the components of the HAL system. For example, he testified that each component of the system existed before 2006, and that one of ordinary skill in the art would find it useful to combine existing and well-known technology—such as wireless routers, video cameras—with home automation software like HAL2000 for purposes of home monitoring and security. (*See* Dkt. 879 at 105:9–114:12.)

IS also mischaracterizes Dr. Johnson’s testimony when it suggests that he used the claims as a “roadmap to combine the pieces of the system to come up with the HAL system.” (Mot. at 17.) Indeed, Dr. Johnson testified that he examined a system assembled by *Mr. Shriver*. (Dkt. 880 at 111:22–112:5.) Dr. Johnson did testify that in reviewing the HAL documentation and evidence to confirm that it invalidated the claims, he “had no reason” to examine unrelated parts of the HAL system. (Dkt. 881 at 22:2–22.) But regardless, under *KSR* one of ordinary skill in the art “will be able to fit the teachings of multiple [references] together like pieces of a puzzle.” *KSR*, 550 U.S. at 420. Thus, even if Dr. Johnson *had* assembled a HAL system to demonstrate invalidity, the claims would still be invalid as obvious under § 103 because he combined only off-the-shelf home automation products according to their intended use.

B. Substantial evidence supports the jury’s verdict of non-infringement.

IS bore the burden at trial to show that the accused products practice each element of the asserted claims. 35 U.S.C. § 271(a); *see also Centillion Data Sys., LLC v. Qwest Commc’ns Int’l, Inc.*, 631 F.3d 1279, 1284 (Fed. Cir. 2011). The absence of even a single limitation defeats a charge of infringement. *See* 2 Ann. Patent Digest (Matthews) § 11:4 (Mar. 2021) (citing *Gen. Am.*

Transp. Corp. v. Cryo-Trans, Inc., 93 F.3d 766, 771 (Fed. Cir. 1996)). Therefore, if substantial evidence supports Amazon’s non-infringement arguments as to at least one element of each asserted claim, the Court must deny the motion. *i4i*, 598 F.3d at 849. Moreover, the Court must “draw all reasonable inferences in the light most favorable to the verdict and cannot substitute other inferences that [the court] might regard as more reasonable.” *Packet Intelligence LLC v. Sandvine Corp.*, No. 2:16-cv-00147-JRG, 2018 WL 9869748, at *1 (E.D. Tex. Sept. 7, 2018) (citing *Boh Bros. Const.*, 731 F.3d at 451). IS here asks the Court to make its own fact findings and credibility determinations and disregard those of the jury. This is impermissible, and IS’s motion falls far short of showing that the requested relief is warranted.

1. Substantial evidence showed that the accused devices are not “hubs” or “management systems” (’983 cls. 22, 24, 39, 62, 64, 67, 80, 103, 105, 108; ’798 patent cls. 5, 6, 52).

These claims recite a wireless hub system or management system able to connect to multiple devices over different communication channels. Amazon’s expert explained that a “hub” is known in the art as a central point in a network connecting to devices over separate communication channels and managing interaction between those devices. (Dkt. 879 (Trial Tr., Johnson) at 122:16–124:19; *see also* Dkt. 870 (Trial Tr., McAlexander) at 35:4–38:5.) The accused Echo, Fire TV, and Fire tablet devices cannot meet these elements because they do not communicate over separate channels to manage different devices. (Dkt. 870 (Trial Tr., McAlexander) at 70:11–71:2; 105:13–106:15.) IS claims that there was no dispute that certain Echo device models with ZigBee chips are wireless hubs. (Mot. at 26.) But Amazon’s expert, Dr. Johnson, addressed this subject directly. He explained that Echos are not wireless hubs because in IS’s own infringement theory, they only interface with a WiFi router, not multiple devices via separate communication channels.

(*See, e.g.*, Dkt. 880 (Trial Tr., Johnson) at 27:21–30:9, 32:17–33:2.)⁷

2. Substantial evidence showed that the accused devices did not have two interfaces ('983 patent cls. 22, 24, 39, 62, 64, 67, and 80).

These claims require two interfaces—an input interface and a network interface. IS argues that the Court should overturn the verdict because the experts disagreed about whether and how those two interfaces could exist on the same WiFi chip. (Mot. at 26–27.) But the Court already ruled that the experts were free to testify to the ordinary meaning of “interface” and whether the accused systems satisfied those limitations. (Dkt. 812 at 2–3.) IS and its expert relied on a single WiFi chip to satisfy both interface limitations. (*See* Dkt. 868 (Trial Tr., McAlexander) at 134:14–137:8, 139:24–142:25, Dkt. 870 (Trial Tr., McAlexander) at 44:1–25; Dkt. 879 (Trial Tr., McAlexander) at 124:20–125:19.) But Dr. Johnson testified that IS’s theory was inconsistent with the way WiFi operates in the invention. (Dkt. 879 (Trial Tr., Johnson) at 126:13–130:4.) An exchange of information over WiFi requires both sending and receiving, and an entire WiFi chip must be used for either, thus indicating that the two interfaces must be separate. (*Id.* at 125:20–126:12; *see also* Dkt. 881 (Trial Tr., Johnson) at 7:20–8:3 (addressing questions based on *Google LLC v. Personal Audio, LLC*, 743 F. App’x 978 (Fed. Cir. 2018); *id.* at 6:8–8:3.) Substantial evidence supports the jury’s verdict as to this element.⁸

⁷ IS also argues that the Court never found that the preamble of the claims was limiting. (Mot. at 26.) This is irrelevant: IS identified nothing from the preamble that Amazon relied upon that is not also set forth elsewhere in the claims.

⁸ IS also argues that there need not be separate structures because the Court did not construe the claims to require that. (Mot. at 26.) But this is irrelevant. Dr. Johnson’s analysis—comparing the plain requirements of the claims to the accused product and the plaintiff’s infringement theory—is valid noninfringement testimony. *See, e.g., GREE, Inc. v. Supercell Oy*, No. 19-cv-00071-JRG-RSP, 2020 WL 3893697, at *2 (E.D. Tex. July 9, 2020). The Court already ruled as much when it permitted Dr. Johnson to testify to this opinion over IS’s objection. (Dkt. 812 at 2–3.) Moreover, even were the Court to construe the claims now after trial, interpretations like IS’s that render some portion of the claim language superfluous are disfavored. *See SimpleAir, Inc. v. Sony Ericsson Mobile Commc’ns AB*, 820 F.3d 419, 429–30 (Fed. Cir. 2016).

3. Substantial evidence showed that the accused devices do not infringe the “updated status” limitation of the asserted claims (’983 cls. 22, 24, 39, 62, 64, 67, and 80, 105, 108; ’798 cls. 5, 6, 52).

Every asserted claim requires a device “configured to” communicate “information for managing” the status of an item in connection with a communication of an updated status. For example, in the diaper monitor invention in the specification, a sensor detects an updated status (i.e., that the diaper is wet) and sends a short-range wireless communication regarding that status. A user then receives information for managing the wet diaper. (*See, e.g.*, PTX1 (’983 patent), cl. 105, 14:3–12.) In the accused system, by contrast, a user asks Alexa to turn on a Philips Hue Lightbulb. There is no “updated status,” nor is there “information for managing” the item that pertains to an updated status. Alexa simply transmits a recording of the user’s request to change the status of the light. At trial, Dr. Johnson testified that the accused devices do not infringe for this reason—the information for managing the status of the item cannot be “in connection with” or “based on” an updated status that has not occurred. (*See, e.g.*, Dkt. 880 at 3:14–10:13; 29:8–31:15; 137:1–11, 160:12–162:10 (cross-examination by Mr. Jackson); Dkt. 879 at 138:3–25.)

IS’s expert reversed the order of the claim in order to testify that there was infringement, arguing that the “updated status” could be the result of the user command. (*See* Dkt. 870 at 76:13–17; Dkt. 869 at 119:25–120:5). But Mr. McAlexander’s testimony contradicted the claim language and the jury was correct to disregard it. Dr. Johnson rebutted Mr. McAlexander’s theory (Dkt. 880 at 3:22–7:20), and the jury heard and saw evidence that Mr. McAlexander submitted a declaration to the Patent Office supporting Dr. Johnson’s reading of the claims. (*See* Dkt. 870 at 79:24–83:15, D1359). Amazon provided substantial evidence from which the jury could find that Amazon does not infringe.⁹

⁹ IS argues also that there was separate testimony that a Ring doorbell met the updated status

4. Substantial evidence showed that the accused devices are not “configured to” perform the claimed functions (’983 patent cls. 22, 24, 39, 62, 64, 67, 80, 105, 108; ’798 patent cls. 5, 6, 52; ’918 patent cl. 28).

Every asserted claim requires a device “configured to” perform the other functions of the claim, including communicating the “information for managing” in connection with a short-range wireless communication concerning an updated status. IS argued at trial that the accused Amazon devices infringe these limitations “out of the box,” (*see, e.g.*, Dkts. 874 (Trial Tr., Ikizler) at 42:6–8; 883 (Trial Tr., McAlexander) at 117:16–24), but it never actually mapped the limitations to the Amazon devices themselves. Instead, IS’s expert mapped limitations to communications between Philips Hue lightbulbs and the Philips Hue Bridge, arguing this was permissible because Amazon’s devices were “configured” to work in this combined system. (Dkt. 870 at 70:11–71:2; 105:13–106:15; Dkt. 883 at 117:16–24.) IS’s theory violated the Federal Circuit requirement that to infringe, a device “*as provided* must be ‘capable’ of performing the recited function, *not that it might later be modified* to perform that function.” *Typhoon Touch Techs., Inc. v. Dell, Inc.*, 659 F.3d 1376, 1380–82 (Fed. Cir. 2011); *see also Nazomi Commc’ns, Inc. v. Nokia Corp.*, 739 F.3d 1339, 1345–46 (Fed. Cir. 2014).

Amazon presented evidence that the accused devices are only “configured to” record and transmit sounds after a user says a wake-word, like “Alexa”; that they know nothing about smart light bulbs or other smart home devices that a user may decide to purchase later; and that a user had to perform several steps in order to configure his or her Alexa device to work with a smart home device. (*See* Dkt. 870 at (Trial Tr., McAlexander) at 107:8–108:15; Dkt. 879 (Trial Tr., Johnson) at 121:1–122:2, 131:8–20, 135:4–10; Dkt. 880 at (Trial Tr., Johnson) at 8:8–25, 13:2–

limitation. (Mot. at 27–28.) But the Ring doorbell was not accused in this case and Mr. McAlexander did not address it in his report, and again, the jury did not have to credit any of Mr. McAlexander’s testimony.

14:1, 17:10–18:8, 26:14–27:11, 31:16–32:8, 36:2–43:10, 47:1–17, 63:5-25.) The jury thus heard substantial evidence from which it could find the accused devices were not “configured to” perform the claimed functions.

5. IS ignored its failure to prove direct infringement under *Centillion*.

Finally, a defendant must “make” or “use” the claimed systems to infringe directly. *Centillion*, 631 F.3d at 1284, 1288. To “make” the claimed systems, a device must “combine all of the claim elements.” *Id.* at 1288. To “use” the claimed systems, the defendant must “put the invention into service, *i.e.*, control the system as a whole and obtain benefit from it.” *Id.* at 1284. This requires a party to use each element of the claimed system. *Id.*

Amazon does not make the claimed system. At trial, Amazon showed that a third-party end user needed to configure the device to communicate with a third-party device to meet all claim elements. (*See, e.g.*, Dkt. 870 (Trial Tr., McAlexander) at 51:5–55:9.) IS’s infringement theory expressly relied upon a communication between a Philips Hue Lightbulb and Philips Hue Bridge. (*Id.* at 53:20–54:21.) There was similarly no evidence that Amazon set up and authorized interactions with the Philips products or local WiFi networks. Instead Amazon, showed that a *user* must log into a Philips Hue account, link their Philips account with their Amazon Alexa account, use the Alexa app to enable the Philips Hue Skills, and ask Alexa to discover the Philips Hue Lightbulb (or any other third-party device). (Dkt. 871 (Trial Tr., Zarka) at 48:14-24.) Thus, Amazon does not “combine all the claim elements” of the claimed system. 631 F.3d at 1288.

Nor does Amazon use the claimed system. The evidence showed that Amazon has no control of a signal once it passes from Amazon’s cloud to a smart home device or hub. (Dkt. 869 (Trial Tr., McAlexander) at 23:19–22; Dkt. 870 (Trial Tr., McAlexander) at 104:4–115:24.) Again, IS’s infringement theory relied on third-party products, such as the Philips Hue Lightbulb and Philips Hue Bridge. (*Id.* at 51:5–55:9.) Finally, IS presented no evidence that Amazon derives

a tangible benefit from the short-range communication between, for example, a Philips bulb and Philips Bridge. (*Id.* at 51:14–24.) Amazon did not “put the invention into service.” *Centillion*, 631 F.3d at 1284. Substantial evidence showed that Amazon could not directly infringe.¹⁰

C. Substantial evidence supports the jury’s verdict of patent-ineligibility at step 2 of the *Alice* test.

IS concedes that the Court did not enter judgment of ineligibility but it nonetheless asks for judgment as a matter of law that no reasonable jury could find that the asserted claims are directed to well understood, conventional, and routine subject matter. Amazon presented substantial evidence on this element and the Court should deny the motion.

1. Amazon presented substantial evidence that the patents claim nothing more than well-understood, routine, and conventional activities.

“The second step of the *Alice* test is satisfied when the claim limitations ‘involve more than performance of ‘well understood, routine, [and] conventional activities previously known to the industry.’” *Berkheimer v. HP Inc.*, 881 F.3d 1360, 1367 (Fed. Cir. 2018) (quoting *Content Extraction & Transmission LLC v. Wells Fargo Bank, Nat’l Ass’n*, 776 F.3d 1343, 1347–48 (Fed. Cir. 2014)). From the evidence presented at trial, a reasonable jury could conclude that the elements of the asserted claims are well-understood, routine, conventional activities previously known to the industry as of the August 10, 2006 priority date—both alone and in combination with its other elements.

Claim 22 of the ’983 patent is exemplary and representative. Claim 22 recites “[a] *wireless*

¹⁰ Amazon also offered substantial evidence that it did not infringe the dependent claims, including because: (1) the accused devices do not include a ZigBee channel (’983 cl. 39; ’798 cl. 6) as only Echo Plus 1, Echo Plus 2, and Echo Show 2 have any ZigBee capability at all, and Mr. McAlexander did not accuse that capability in his infringement theory (*see* Dkt. 870 at 51:6–53:17; Dkt. 869 at 15:16–16:17.). (Dkt. 869 at 15:16–16:17; Dkt. 870 at 53:20–57:4); no accused device sends a “unique identifier” (’983 cls. 62, 64, 67, 80, 105, 108; ’798 cls. 5, 6, 52; ’918 cl. 28); the accused devices do not include a sensor that detects an updated item status (’983 cl. 64, 108; 798 cl. 5), as in IS’s theory there is no sensor of an item at all, but rather a recording of a spoken command; and the accused devices do not include a “mapping table” (’983 cls. 105, 108; ’798 cls. 5, 6, 52). (*See, e.g.*, Dkt. 880 at 19:25–21:18, 49:9–51:2, 55:9–60:22.)

HUB system for managing information communications comprising an input interface configured to receive a *wireless signal* though a *wireless communication network*” and “a network interface configured to provide a communication through a *network communication channel*.” (PTX1.) Testimony at trial established that the named inventors did not invent any of these elements; they were instead existing, routine, and conventional technologies. (See Dkt.878 (Trial Tr., Wang) at 162:15–19 (he did not invent WiFi); *id.* at 162:20-21 (he did not invent cellular technology); *id.* at 163:8–10 (he did not invent the idea of wireless networking); *id.* at 163:11–17 (he did not invent the idea of wireless interfaces); Dkt. 870 (Trial Tr., McAlexander) at 19:12–19 (A. Wong did not invent WiFi or WiFi computer chips or circuits); *id.* at 20:13–23 (A. Wong did not invent any new wireless protocols or anything about WiFi antennas)); *id.* at 28:16–18 (A. Wong did not invent the Internet); *id.* at 29:11-14 (A. Wong did not invent WiFi routers); Dkt. 879 (Trial Tr., Johnson) at 83:17-23 (wireless local area networks well-known in the field); *id.* at 96:21–98:12 (wireless hubs for smart home automation systems were well-known); *id.* at 106:12–114:12 (wireless networking and wireless hub devices were conventional, including ALOHAnet introduced in the 1970s, WaveLAN/WavePOINT beginning in 1991, the Windata system from 1992, and WiFi beginning in 1997); Dkt. 870 (Trial Tr., McAlexander) at 19:1–20:23 (WiFi was a conventional wireless communication protocol); *id.* at 25:19–30:18 (Streaming over the Internet, HDMI, and WiFi routers conventional)).

Claim 22 further recites that the “wireless HUB system” comprises “a *decoder*” and “wherein the wireless HUB system is configured to perform a *conversion of the wireless signal* to accommodate production of a corresponding information content, the wireless signal comprising a *compressed signal*, the *conversion* comprising *decompressing the compressed signal*” and “wherein the *decoder* is configured to *decompress the compressed signal*.” (PTX1.) Testimony established that the named inventors did not invent these elements (decoders, encoders, signal compression, or signal decompression) and that they were well understood, routine, conventional,

and known to the industry as of August 10, 2006. (See Dkt. 878 (Trial Tr., Wang) at 162:24–163:4 (did not invent signal compression); *id.* at 163:1–163:7, 163:18–19 (did not invent signal decompression); *id.* at 163:20–164:12 (did not invent encoding or decoding methods, including MPEG or video or audio encoding or decoding algorithms); *id.* at 164:20–21 (did not invent HDMI); Dkt. 870 (Trial Tr., McAlexander) at 27:19–30:9 (A. Wong did not invent any video compression technology, codecs, compression algorithms, decompression, or HDMI); Dkt. 879 (Trial Tr., Johnson) at 83:24–84:7 (video conversion aspect of the claims include only certain well-known compression algorithms and don’t disclose any new compression algorithms, decompression, encoding, or decoding algorithms); *id.* at 99:23–104:24 (video compression, decompression, and encoding referenced in the patents was well-known and conventional in August 2006—including ATSC, MPEG-2, HDTV transmission, and HDMI); Dkt. 870 (Trial Tr., McAlexander) at 25:11–30:12 (various codecs and compression technology in patents were conventional and well-understood).

Claim 22 further recites that “wherein the wireless HUB system is further configured to communicate, through the network communication channel, information for managing an *item status of an item* in connection with a *short range wireless communication* regarding an *updated status of the item*” and “wherein the network communication channel is separate from a *wireless channel* for *short range wireless communication*.” Testimony established that the named inventors did not invent short range wireless communication channels like Zigbee or Bluetooth; rather, they were conventional at the time of the patents. (See Dkt. 878 (Trial Tr., Wang) at 162:22–23 (did not invent ZigBee); *id.* at 162:24–25 (did not invent Bluetooth); *id.* at 164:13–19 (did not invent short-range wireless communication); Dkt. 870 (Trial Tr., McAlexander) at 23:8–10, 24:22–6 (A. Wong did not invent Zigbee or Bluetooth). Testimony further established that short range wireless communication channels and sensors *for detecting and communicating an updated status of an item* were well understood, routine, conventional, and known to the industry as of August 10, 2006. (See Dkt. 879, (Trial Tr., D. Johnson) at 83:17–23 (asserted patents disclosed existing standards

for short-range communication that were already well-known in the field); *id.* at 86:17–89:24 (sensors disclosed in patents including diaper and wetness sensors were well-known and conventional); *id.* at 90:3–99:21 (smart home sensor and wireless short-range communication technology was conventional and well-known from beginning in the 1960’s through the time of the patent); *id.* at 98:13–99:11 (ZigBee Alliance and ZigBee standard created as short-range wireless system for use in home automation systems before 2006); Dkt. 870 (Trial Tr., McAlexander) at 20:24–23:7 (ZigBee specification is an industry standard for home automation wireless communication).)

Finally, trial testimony established that ordering (which the patents do not actually do) or combining the elements recited by Claim 22 was also well understood, routine, conventional, and known to the industry. (*See* Dkt. 879 (Trial Tr., Johnson) at 104:25–106:11 (combining different aspects of home automation with video compression was commonplace and well-known at that time); *id.* at 115:7–117:14 (item status updates, wireless hubs, wireless communications, short-range communications, and video compression and decompression either by themselves or in combination were well-known and conventional).)

The other asserted claims consist of various combinations and minor variations of the same well-known and conventional elements—including receiving multimedia signals through wireless networks; communicating information over conventional wireless networks; using a hub to communicate with over a conventional network; encoding, decoding, compressing, decompressing, and converting signals; communicating about the status of items over a short-range or other wireless communications channel system; communicating “in connection with,” “in conjunction with,” or “based on” another communication; limiting the field of use of the item status limitation to “household items”; using a conventional “unique identifier” for an item, device, or hub; using a conventional sensor or “sensing device” to detect the updated status; adding a “configuration setting” (for which no technology is disclosed) that specifies “when or how” to send a notification of an updated status; limiting the field of use of the short range communication to the preexisting

ZigBee protocol; adding a conventional “mapping table” to the wireless hub; storing generic network or device information in any conventional mapping table; limiting the signal conversion to the field of HDTV or digital television; specifying that the wireless hub can communicate with a cell phone. (See PTX1 (’983 patent), cls. 24, 39, 62, 64, 67, 80, 105, 108; PTX2 (’918 patent), cls. 28, 112, and 113; and PTX3 (’798 patent), cls. 5, 6, and 52.) Indeed, even IS’s technical expert Mr. McAlexander testified at trial that the asserted claims have only minor differences. (Dkt. 869 at 20:19–21:21.) The testimony at trial, including the specific testimony cited and discussed above, established that these limitations were all conventional as of the time of the patents. Thus, the asserted claims fail to recite an “inventive concept,” amounting to “significantly more” than their abstract ideas. *ChargePoint Inc. v. SemaConnect, Inc.*, 920 F.3d 759, 773 (Fed. Cir. 2019).

2. IS’s arguments for rejecting the jury’s verdict are unavailing.

None of IS’s arguments merit the relief it seeks—IS argues for new legal rules that no other court has recognized. IS first takes issue with the way the Court structured the trial. The Court ruled that it “is not required to rule on questions of law inherent in the *Alice/Mayo* framework before the matter is presented to the jury for questions of fact.” (Dkt. 812 at 4.) IS argues this was incorrect because the jury must *first* hear what abstract concept the patent claims before it can consider whether limitations in the claims add something unconventional and “significantly more” than the abstract idea itself. (Mot. at 21.) But IS cites no case holding to that effect. Indeed, other courts have structured trial on § 101 just as this Court did. *E.g., Infernal Tech., LLC v. Sony Interactive Entm’t LLC*, No. 2:19-CV-00248-JRG, 2021 WL 405813, at *3 (E.D. Tex. Feb. 3, 2021); *Maxell, Ltd. v. ZTE Corp.*, No. 16-cv-00179, Dkt. 181 at 9–10 (E.D. Tex. June 8, 2018). And many other courts have exercised their discretion to reach step 2 of the *Alice* test without deciding step 1.¹¹ The reason that this does not impede the analysis is because claim limitations

¹¹ See, e.g., *Peloton Interactive, Inc. v. Echelon Fitness, LLC*, No. 19-cv-1903 (RGA), 2020

are not divided between the two steps. Instead, “both steps of the *Alice* inquiry require that the claims be considered in their entirety.” *GREE, Inc. v. Supercell Oy*, 834 F. App’x 583, 590 (Fed. Cir. 2020) (citing *Alice*, 573 U.S. at 217).

IS’s other arguments fail for similar reasons. IS contends that Amazon was required to present evidence and prove separately that the claims are “well-understood” *and* “routine” *and* “conventional.” (Mot. at 21.) But no court has held these are separate elements of proof. To the contrary, a claim element does not add an inventive concept if it is any one of those things. *See OIP Techs., Inc. v. Amazon.com, Inc.*, 788 F.3d 1359, 1362–63 (Fed. Cir. 2015) (affirming district court’s finding that a computer-based implementation was not patent-eligible as the claims covered “conventional computer activities or routine data-gathering steps”) (emphasis added). IS also contends that Amazon was required to present expert testimony concluding that the claims are conventional on a limitation-by-limitation basis. But again, no other court has so held. Here, Dr. Johnson provided an opinion on patent-ineligibility that included analysis of each of the claim elements and their use in combination. Combined with the admissions of the named inventors that they did not invent any of the elements, that was sufficient to support the jury’s finding.

II. INNOVATION SCIENCES IS NOT ENTITLED TO A NEW TRIAL

IS contends that a new trial is warranted based on its same arguments for judgment as a matter of law. The Court should reject these for the reasons described above. IS identifies no other prejudicial error requiring a new trial.

WL 3640064, at *3 (D. Del. July 6, 2020); *Proto Labs, Inc. v. Ico Prods., LLC*, No. 15-cv-2562 (SRN) (JSM), 2016 WL 4974951, at *6 (D. Minn. Sept. 16, 2016); *Orbcomm Inc. v. Calamp Corp.*, 215 F. Supp. 3d 499, 508 (E.D. Va. 2016); *TRUSTID, Inc. v. Next Caller, Inc.*, No. 18-cv-172 (LPS), 2019 WL 917995, at *2 (D. Del. Feb. 25, 2019), *report and recommendation adopted*, No. 18-cv-172 (LPS) (CJB), 2019 WL 1324948 (D. Del. Mar. 25, 2019); *S.I.SV.EL. Societa Italiana per lo Sviluppo Dell'Elettronica S.p.A v. Rhapsody Int'l Inc.*, No. 18-cv-69 (MN) (CJB), 2019 WL 2298795, at *4 (D. Del. May 30, 2019).

A. The Court properly instructed the jury on written description and IS failed to establish entitlement to a new trial on that issue.

“In the Fifth Circuit, two requirements must be met before a new trial will be granted based on an erroneous jury instruction.” *True Believers Ink 2, Corp. v. Russell Brands, LLC*, No. 4:18-cv-00432, 2020 U.S. Dist. LEXIS 77689, at *9–10 (E.D. Tex. May 4, 2020) (J. Mazzant). “First, the movant must demonstrate that: ‘the charge as a whole creates substantial and ineradicable doubt whether the jury has been properly guided in its deliberations.’” *Id.* (quoting *Hartsell v. Dr. Pepper Bottling Co. of Tex.*, 207 F.3d 269, 272 (5th Cir. 2000)). “Second, ‘even if the instruction was erroneous, the instruction must have affected the outcome of the case.’” *Id.* (quoting *Hartsell*, 207 F.3d at 272). IS fails to show entitlement to a new trial based on the Court’s written description instruction because that instruction was neither erroneous nor would IS’s replacement instruction have changed the outcome of the case.

IS contends that the Court should have instructed the jury that written description is determined solely by “the specifications of the patents-in-suit.” (Mot. at 4–5.) Black letter law provides that written description analysis occurs “as of the filing date sought.” *Ariad Pharm., Inc. v. Eli Lilly & Co.*, 598 F.3d 1336, 1355 (Fed. Cir. 2010) (en banc) (quoting *Vas-Cath*, 935 F.2d at 1563). Indeed, the parties jointly proposed the instruction containing the “effective filing date” that IS now complains about, taking their proposal from Federal Circuit Bar Association model instruction 4.2a. (Dkt. 787 at 43.) Moreover, IS’s reliance on *Reiffin v. Microsoft Corp.*, 214 F.3d 1342 (Fed. Cir. 2000) is misplaced. (Mot. at 4–5.) Under 35 U.S.C. § 120, patentees may claim the benefit of an earlier application filing date if that earlier application provides written description support for the issued claims. *Reiffin*, 214 F.3d. at 1345. In *Reiffin*, the plaintiff sought the filing date of the 1990 and 1994 continuation applications that issued as the asserted patents. *Id.* at 1343–

46. The Federal Circuit held that it was improper for the district court to consider written description in a 1982 application because it was earlier than the *filing dates sought*. *Id.* at 1345–46.

By contrast, throughout this case, IS sought the benefit of the August 12, 2006 filing date. (Dkt. 824-1 at 6; Dkt. 832-2 at 20–21; Dkt. 832-3 at ¶¶ 19, 67; Dkt. 832-4 at ¶ 9; Dkt. 787 at 13, stipulated fact 18; Dkt. 871 (Trial Tr., Wong) at 157:2–5.) Accordingly, IS cannot reasonably argue that including this date in the instruction was improper. Moreover, when the testimony at trial made it clear that the August 10, 2006 application failed to provide support for the asserted claims, the Court added the February 2007 date to the jury instructions *at IS’s request* over Amazon’s objections. (See Dkt. No. 834.) Under the invited error doctrine, IS cannot complain of (alleged) “errors which [it] induced the district court to commit.” *McCaig v. Wells Fargo Bank (Tex.), N.A.*, 788 F.3d 463, 476 (5th Cir. 2015) (invited error doctrine applies to jury instructions).

Finally, IS’s assertion that “it was utterly irrelevant to whether the Innovation’s patents-in-suit were entitled to the either the 2006 or the 2007 filing dates” is also incorrect. (Mot. at 6.) The applications that issued as the asserted patents were filed in 2016 and 2017 respectively—more than two years after Amazon released Alexa. (Dkt. 878 (Trial Tr., Torok) at 60:7–9; *id.* at 82:13–83:12; Dkt. 879 (Trial Tr., Johnson) at 71:25–74:18; Dkt. 883 (Trial Tr., McAlexander) at 82:13–23; D52; D56; D57). “[A] product ‘which would literally infringe if later in time anticipates if earlier.’” *Upsher-Smith Labs., Inc. v. Pamlab, L.L.C.*, 412 F.3d 1319, 1322 (Fed. Cir. 2005). In other words, if IS failed to prove either of its claimed priority dates, then *the accused products* were prior art to the patents, and IS could not maintain an infringement claim against them. See *PowerOasis, Inc. v. T-Mobile USA, Inc.*, 522 F.3d 1299, 1305–06 (Fed. Cir. 2008) (proof that

product was in public use more than a year before the filing date shifts burden to patentee to establish earlier priority date).¹²

B. The Court properly allowed the testimony of Tim Shriver.

IS next contends that the Court erred in allowing the testimony of Tim Shriver and permitting the jury to view videos of the HAL system. (Mot. at 28–33.) The Court ruled correctly on each of IS’s objections. (*See, e.g.*, Dkt. 908-17 (8/30/20 Order).) None warrant a new trial.¹³

1. Mr. Shriver established his personal knowledge of the operation of the HAL system as of August 10, 2006.

Contrary to IS’s assertion, Mr. Shriver had personal knowledge of the subjects he testified about. He was not only the founder and CEO of Home Automated Living, but he also designed and wrote code for the HAL2000 software and supported customers in configuring their home automation systems. (Dkt. 879 (Trial Tr.) at 26:3–28:7, 55:16–23, 44:14–16.) He personally collected the HAL system components and documentation and confirmed they all existed before 2006. (*Id.* at 51:20–52:1.) And he helped to set up the system that Dr. Johnson examined. (*Id.* at 51:17–52:12.) Finally, he testified based on his experience assisting customers with setting up their own home automation systems that he knew that customers configured their HAL2000 software in the same manner as the HAL system. (*Id.* at 27:25–28:1, 44:14-16.) IS’s argument that Mr. Shriver had no personal knowledge of the facts to which he testified is groundless.

¹² The case IS cites to argue that “priority date does not matter” holds just the opposite. In *Tronzo v. Biomet, Inc.*, 156 F.3d 1154, 1158 (Fed. Cir. 1998), the Federal Circuit held that to “[f]or a claim in a later-filed application to be entitled to the filing date of an earlier application under 35 U.S.C. § 120, the earlier application must comply with the written description requirement of 35 U.S.C. § 112, ¶1 . . . [and] [a] disclosure in a parent application that merely renders the later-claimed invention obvious is not sufficient to meet the written description requirement; the disclosure must describe the claimed invention with all its limitations.”

¹³ IS notes that it filed a motion *in limine* to exclude lay opinion testimony “which was denied in favor of objecting at trial.” (Mot. at 29 n.7; Dkt. 735.) But IS did not identify Mr. Shriver in this motion, despite IS’s advance notice of his testimony.

2. Mr. Shriver’s testimony about the HAL system was not opinion testimony.

IS’s argument that Mr. Shriver offers improper expert testimony also fails. The Federal Circuit has held it is an abuse of discretion to preclude a witness from testifying regarding his personal knowledge of prior art systems, where there is no risk of admitting expert opinion testimony on invalidity. *Meyer Intellectual Props. Ltd. v. Bodum, Inc.*, 690 F.3d 1354, 1376–78 (Fed. Cir. 2012). Mr. Shriver testified only about his creation of the HAL2000 system and its features; he offered no opinions regarding any infringement, invalidity, or damages issue in this case—specifically, he offered no opinions about whether HAL2000 disclosed any limitation of any claim in the patents at issue. (*See* Dkt. 879 (Trial Tr.) at 21:20–58:3.) He did not testify about any of the asserted patents or the asserted claims. Moreover, his testimony was not even particularly complex: it concerned the use of the HAL2000 software, previously sold to the general public, installed on a Dell desktop computer. (*See, e.g., id.* at 28:11–20; 57:2–5.) But even if the testimony was “technical” in nature, that would still be proper fact testimony because it is based on his personal knowledge of the system. *See Hynix Semiconductor Inc. v. Rambus Inc.*, No. C-00-20905 RMW, 2009 WL 230039, at *10–12 (N.D. Cal. Jan. 27, 2009), *aff’d*, 645 F.3d 1336 (denying request for new trial, noting that “the court does not believe it is ‘expert’ testimony for . . . an engineer to describe the products he has built” even when such testimony draws on “technical knowledge”). And his testimony about how the HAL system “could have” or “would have” operated is also based on his personal knowledge—including, *e.g.*, his experience providing support to HAL2000 customers and helping them build home automation systems. (Dkt. 879 (Trial Tr., Shriver) at 27:25–28:1, 44:14–16.)

IS also contends that Mr. Shriver’s testimony was not properly corroborated. (Mot. at 30.) This contention lacks merit. Amazon introduced evidence—namely, the physical system itself

including the HAL2000 software in its original packaging, the accessories that Mr. Shriver collected, the HAL2000 user manual, and screen shots of the configured system—that corroborates Mr. Shriver’s testimony. (*See, e.g.*, D74, D75, D79, D80, D173, D615, D1179.) The Court committed no error in admitting the testimony.

3. The Court properly allowed the jury to view video demonstrations of the HAL system as demonstratives only.

IS repeats its argument that the Court should not have allowed Amazon to play demonstrative videos of the HAL system for the jury. (Mot. at 33.) The Court correctly overruled IS’s objections, and this issue does not warrant a new trial. (*See, e.g.*, Dkt. 879 (Trial Tr.) at 4:3–13, 4:24–5:11, 5:25–6:13, 7:2–15, 9:5–10:7, 10:20–11:18, 12:4–16, 13:21–14:4.) There is no dispute that Dr. Johnson relied on the demonstrative videos in forming his opinion on the HAL system. (Dkt. 880 (Trial Tr.) at 67:9–69:7, 69:22–70:4, 73:2–10, 74:23–75:1, 93:22–94:4, 126:14–127:10.) Experts may rely on otherwise inadmissible material (*see* Fed. R. Evid. 703), and the Court properly permitted Dr. Johnson to use the videos to support his testimony, even though the videos themselves are not—and were not entered as—evidence. The Court committed no error. *See Biscotti Inc.*, 302 F. Supp. 3d at 817–21 (finding no error in allowing a jury to view a demonstrative video depicting the operation of a prior art system).

III. THE COURT SHOULD NOT ADD OTHER DEFENDANTS TO THE JUDGMENT

IS asks the Court to add other parties, including defunct entities, to the judgment. IS did not identify these entities as defendants in the pretrial order and it put forth no evidence about them (*see* Dkt. 889 at 3; Dkt. 892 at 3–5), and the Court has already denied the requested relief (Dkt. 896 at 5–7). IS raised this issue only to preserve it for appeal. (Mot. at 33.) The Court should deny the request.

CONCLUSION

For the foregoing reasons, the Court should deny the motion.

April 30, 2021

Respectfully submitted,

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CERTIFICATE OF SERVICE

The undersigned hereby certifies that all counsel of record who are deemed to have consented to electronic service are being served with a copy of this document via the Court's CM/ECF system per Local Rule CV-5(a)(3).

/s/ Todd R. Gregorian

Todd R. Gregorian